

An Electronic Information Item Selection for Trade and  
Traded Item Control Delivery System

## FIELD OF THE INVENTION

The field of this invention relates to an electronic information item selection for trade and the traded item control delivery system, more particularly, it relates to a system that selects, maps, groups, packages, labels and prices media/television information items by time and content. The system includes classifying, indexing, listing, searching and purchasing; as well as a control system for subscriber's secret key issuance, submission, and authorization, and management of the secret key; encryption of the content for transmission, and decryption of the content for delivery and display.

## BACKGROUND OF THE INVENTION

U.S. Patent Nos. 6,028,599 and 6,341,195 described an electronic program guide and its data base system; U.S. Patent No. 6,088,722 describes a personalized TV program selection system. Although these patents relate to an electronic program guide and program selection systems, the purpose of those system are all for watching pre-selected and recorded program at later time, while never touch the subject of the present invention, pre-select program for not use at specified time frame, but for preparing them into new time-tagged information items combination (hereafter refers to as dealpack) to send out for trade; U.S. Patent No. 6,058,417 describes a subscriber to subscriber electronic trading system on the internet, and U.S. Patent No. 6,226,675 described a corporate group to corporate group electronic online trading system. These systems are all set up for conventional physical goods trading, there is not yet a real or delayed or relayed time trading system for trading electronic information items dealpacks trade, such as TV programs, etc., media, and information products.

Currently, electronic information (such as TV programs) items are provided by information content providers to information content network operators, who assemble the information content by channels and sell to subscribers on a monthly subscription basis. A content provider can sell its own content to many electronic information content network operators; an information content network operator can have its own mass subscriber base in a region, but content providers in most cases do not have a real time supply relationship

with ~~the~~ operators' subscribers associated with a content network; network operator due to limitation of territory, ~~and~~ only provide monthly service to its subscribers within its own network ~~reached area[[;]]~~, while ~~s~~ Subscribers who pay the monthly subscription fee, if ~~are provided with~~ the subscribed content (such as TV programs) ~~which is typically composed~~ of several hundred channels, and in certain time frames (such as several days or certain day) the subscriber ~~may only use a portion of the few content[[s]]~~ (such as only watch several or tens of channels), the content[[s]] for the rest of the time (or rest of channels) are wasted. In other cases, due to the internet technology development, if a content provider provides content directly to world wide subscribers via internet by the method of streaming SVOD (Subscription Video on Demand), though the quality is still in question, it breaks the area limitation of regional network's operation and some even bypass the network operation~~[[;]]~~. Similarly, a satellite direct broadcast network operator also is not restricted by terrestrial limitations. Both SVOD providers and satellite direct broadcast networks~~satellite~~ TV operators all encounter the limitation of various nations' government administration policy and media import and export control as well as content usage when their content ~~is delivered~~ to these controlled areas. Since one subscriber can only use one or several channels of media at time, while ~~they~~ he owns the access right to the content operator's authorized media pool, which may contains hundreds or thousands of titles or channels of information or media~~[[;]]~~. When~~i~~f the subscriber only uses certain number of titles or channels of media in certain time, the rest of the title or media within or beyond the specified time shall be idle or wasted.

## SUMMARY OF THE INVENTION

The objective of this invention is to provide a ~~trading system~~ solution that will enable trading of electronic information items (i.e. media/television electronic information items commonly referred to as content). ~~The~~ The trading system provides electronic information content providers and network operators with the ability to trade their content via their subscribers. The content providers and network operators who desire to trade their content may be in the same area or different areas and will have the ability to trade their content in real, or delayed, or relayed time. This can be accomplished with content providers in other areas via their corresponding electronic information content network operators inof their respective areas or directly through a trading network exchange serverenter and deliver the content in a secured mannerway. In order to realize the objective of the invention, the this invention provides a system for ~~trading~~ electronic information items. The system includes a process for selecting electronic information items selection for and trade, transforming the for trade electronic information items into trading packages or dealpacks, and as well as traded items, the dealpacks' controlling delivery of the dealpacks. In one preferred embodiment of the invention, the system it includes a trading network center control[[led]] device, such as client side TV set-top box, a computer, and/or a handheld PC[[/]], PDA, server side cable head-end, telecom node, or computer hub, on which download/upgrade an electronic program item selection software means can be downloaded/upgraded.~~[[[.]]~~ The software means for selecting electronic

program items that can conduct the selection of the electronic information items ([']) selection by their specified time frame and content, ([,]) The packaging process or system (can be called the pack-engine) then maps and groups the remaining (for trade) for not use items in accordance with a pre-defined grid/matrix/matries[[,]] into trading packages or dealpacks,[[,]] [[,]] Label data and[[,]] price information are incorporated them into the trading packages or dealpacks by the packaging process/pack engine and the The dealpacks are listed for trade (which may occur in them out for real, delayed, relayed time), trading and control delivery; The system includes and also comprises a trading network center controlled system for controlling dealpack indexing, listing, searching, trading, charging and billing as well theiras its encryption for transmission and decryption for delivery and display.

The above said-software means for selection of electronic information items (such as TV programs) selection and packaging out for trading includes an interactive electronic program selection guide (EPG). Such a selection guide (could be an electronic program guide or EPG) could be interactively operated via a control device, such as set-top box, a computer, and/or handheld device, that includes a rolling display of the listing/guide on TV/PC or via internet web pages directly or through internet channel. A userSubscribers makes a selection items-via the selection guide (such as EPG), which may include the selected item could be time frame or time frame group, or item (such as program channel/title or channel/title combination), which are listed by pre-defined format, such as time along horizontal axis and items (such as channel/title or channels/titles combination) along vertical axis. When selecting items, a usersubscriber can press keys on a pad (such as computer or phone), buttons on a remote control unit[[,]] (such as a remote control, a mouse, or a touch panel), or use touch pen to select some items as for-use[[,]] and others as for trade for not use (where they may be rented, leased, or sold, etc, or for rent, for trade, for lease or for sale, etc.) in a specified time frame. Also a usersubscriber can select to further display some label information (such as program briefing, author, publishing date etc.). Once those for not use items being determined, the items for trade shall be immediately mapped into a pre-defined grid/matrix/matries for regrouping and pricing by the dealpack pack-engine on the server side, where they are then will be put into trading status. The pack-engine is a packaging process or system that transforms the content in the dealpacks as seen in Fig.1. This status shall be the authorization from the usersubscribers to their content/network operator[[s]] to send those time tagged for trade for not use items[[']] labeling data into a regional trading database server, which is linked with the network center trading database exchange server and updated in real time to enable internal (trading among the content/network operator's own subscribers) or external (trading with subscribers of other networks operators) trading.

The above mentioned network center online listing and content search /purchase trading system includes regional log-on servers which are linked with the trading network center's exchange server[[s]]. The regional These local servers can provide localized web interface for log-on by the local network operator and its subscribers[[,]] and provide a

classified listing area (such as on the internet or cable network) for the dealpacks.[[.]]) They also allow searching, selection, and purchase of the dealpacks which can be accomplished area-by key words, class, and operators names for registered log-on local or related other regions' subscribers. The trading system/network center operator is in charge of the administration and operation of the trading database and servers, including registering content/network operators and their subscribers[[]], providing log-on authorization, online search system maintenance, trading settlement, secret key issuance/release, and the management of the drop-in subscribers' control device (such as set-top box or network card), sales and their log-on authorization. Once the content network operator has registered its subscribers on to the trading network, they can then link to the time-tagged for-not-use trade dealpack database server to the trading network center's trading database exchange servers for listing out. The Operator's subscribers and drop-in users can then search the listedwanted dealpacks and to make purchases. For one preferred embodiment of the invention of TV program selection and purchasing, the search results could be a list and include the price of the dealpacks.[[.]] purchasing, and supply method, etc.. If a user clicks on a certain dealpack, it can further display its labeling data, such as program titles, authors, directors, main actor/actress, briefing description of the program[[s]], publishing dates, pictures, previews and time for play, etc.[[.]] Once purchased, the trading center can use debt (where they settle the account with the operators by-monthly), or use a credit card/bank card as payment tool to close deal online. Once paid, the purchaser shall be given a secret key, which could be administered by the trading network center on behalf of the purchaser to deliver the dealpack to the purchaser by scheduled time, or the secret key could be submitted by the purchaser him/herself via internet, cable or wirelessly to activate the dealpack delivery and display of its content.

The secret key for each~~the~~ dealpack mentioned above is generated by an algorithm~~method~~ of assembling the selling-subscriber's key, time frame identifier and identifier of the dealpack as well as verifier of payment for the dealpack.

The above-mentioned secret key authentication, dealpack encryption transmission, gateway decryption, release for delivery and display system include the dealpack's encryption transmission, decryption for delivery and display control device and method. The said-control devices may be composed of a set-top box type device, remote handheld PC, PDA, server side cable head-end, telecom node, or computer hub, network card, network gateway and authorization card, dealpack pack-engine, the soft secret key, etc.: The control device they operates together with the trading network's subscriber administration, network administration and billing system to provide the purchased dealpack encryption and decryption chain and delivery conduit to the purchaser[s]]. The said-method includes the steps of: downloading the EPG software means; selecting for-use items for-use and confirming the for-not-use items for trade; send the for-not-use items for trade to the dealpack-pack-engine for packaging, pricing and sending out to trading exchange server via the database server for listing.[[.]] The purchaser searches through the listed dealpacks and purchases the secret key for theselected dealpacks they select.[[.]] The

network administrator controls and authenticates the secret key, encrypts and transmits the dealpack[[.]] Subscribers on the same network subscribers trade with each other via the network center to verify the secret key and issue a pass to let control devices, such as a set-top box[[/]] or a network card[[.]] release and deliver the dealpack[[.]]; while subscribers on different network subscribers trade each other via network center/gateway and set-top box together to verify the secret key and issue a pass to deliver the dealpack.

The objective and characteristics of the invention will become apparent from the following drawings and the detailed description.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is the overall flow chart of the information item selection and packaging into dealpack for listing on the trading network.

FIG. 2 is the overall block diagram of dealpack trading and delivery system.

FIG. 3 is the process block diagram of the dealpack search, selection, purchase and receiving by a user of the trading system subscriber.

FIG. 4 is the block diagram of dealpack secret key assembling and generating method

#### DETAILED DESCRIPTION

A preferred embodiment of the present invention is disclosed in the flow chart/block diagram as illustrated in FIG. 1. A userSubscribers first selects the program they wanted to watch. They can start from a classification index 100a, use hand held control unit to select the items for-useinterested 111, then they select from the EPG 100 the wanted channels 110 and its code or name 130. If they want to further understand the program, the subscriber can select the program 131, then a window 132 will open and it illustrates related information about the program. The subscriber can further select the time frame or time frame group 188 based on the selected channel combination 140, including to input/select the starting time and date 151 and ending time and date 152, then confirm with 160. Once confirmed, under the account number 171 of the subscriber, the packaging system or dealpack pack-engine 180PCE will put all the rest (i.e. the remaining) of the channels/programs 170 into a pre-defined grid/matrixmatrices 180 forte pricing 185 in accordance with the channels 110483 and time frametime-tag 188 and show time 184 as well as dealpack ID 187, and class code 189. UponWith confirmation for trade 186, the dealpacks 187 will be automatically be sent to the regional trading network database server 190 linking the trading network control center trading exchange server 200 forte listing.

Fig. 2 is an illustration of the trading system where two content/network operators are associated with the trading system through the trading center 200. The trading center includes a listing database and an exchange server. As illustrated by FIG. 2, FIG. 3, and FIG. 4, subscriber shall select dealpack for watch. Before dealpack trading can beginFirst, content/network operator A and content/network operator B register and log-on to the trading network center 200300. [1,] The the subscribers associated with theseof this content/network operators are shall then automatically registered on trading network. Fig. 3 shows the steps for purchasing a dealpack which begin with the step where the content/network operators log-on to the trading network (step 300) through dealpack release (step 361)300. In the mean time, trading network operator will link the dealpack database servers 190 to trading network center exchange server 200, and timely upgrade 301 with it. Database servers 190a and 190b are linked with the trading network center 200. The subscribers associated with content/network operators A,B are connected into the trading network center 200 via their operating device. Specifically, subscriber A1 associated with content/network operator A is connected to the trading network center 200 by their computer 211. Subscriber A2 is connected by their TV. Drop in subscriber 1 and drop in subscriber 2 are not associated with either content/network operator. Drop in subscriber 1 is connected to the trading network center by computer 201 and drop in subscriber 2 is connected by TV 202. The trading system supports a variety of different users, some of which have access to content (subscribers a1, a2, b1 and b2 seen in Fig. 2) and those who only have access to content through the trading network center 200 (drop-in user 1 and drop-in user seen in Fig. 2)Network A operator 190a (or network B operator 190b, trading network operator 200) and their subscribers A1(or B1, or drop in subscribers 1) shall be connected into trading network server 240/200 via computer 241 (or 222, 201) or subscriber A2 (or B2, or drop in subscriber 2) via television 212 (or 221, 202). Dealpack label data can be searched/listed 321 via key word, indexed by classification or name of the content operators, subscriber can accordingly search and purchase the dealpack 310, confirm with 320, close deal and settle account 321; payment 320 could be settled on a monthly basis via registered content operator's A or B's account; or if by credit card or bank card, settled by credit or cash 331. Upon payment settlement (item 330 in Fig. 3), the trading network center generates the secret key. Fig.4 is a flow chart of the generation of the secret key. The secret key is a combination of a key from the selling subscriber and includes dealpack ID, time frame and payment verifier. An algorithm takes these items and generates the secret key. In this instance, subscriber B is purchasing a dealpack and its associated secret key. The secret key includes a key from subscriber A, since subscriber A was the one who went through the selection process previously described. Once paid, trading network operator 200 shall issue/release 330 secret key 403 to subscriber 221, or to trading network operator 200 itself to administered the secret key 403 and activate timely 341 for subscriber 221. Once the secret key 403 submitted 351, the system shall verify and issue pass 360. The secret key 403 could be submitted 351 via wire, cable, internet or wirelessly. Secret key 403 is generated from selling subscriber's key plus purchased dealpack identifier 187 and time tag 188 as well as payment settlement verifier 330. For same network subscribers trading, the key 403 shall be verified by trading network center 200 and issue pass through set top box/network card, while subscribers from different network trading, the key shall be verified by network gateway 231/232 and

It is to be understood that the above preferred embodiment of the invention is only illustrated the key concept and composition of this invention, many variations and modification can be made based on the accent of the above embodiment, which will be apparent to one skilled in the art, that are also within the spirit and scope of the invention as set forth in the claims below.